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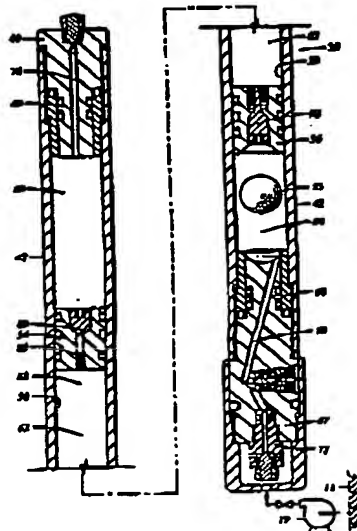
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(54) Abstract Title: Dual piston single phase sampling mechanism and procedure

(57) A method and apparatus for maintaining the single phase integrity of a deep well formation sample that is removed to the surface comprises a vacuum jacket (32) insulated single working cylinder (30) divided by two free pistons (54, 56) into three variable volume chambers (60, 62, 64). The intermediate chamber (62) is pre-charged with a fixed quantity of high pressure gas. Wellbore fluid freely admitted to one end chamber (64) bears against one free piston (56) to further compress the gas. The formation sample is pumped into the other end chamber (54) to first, displace the wellbore fluid from the first end chamber (64) and, sequentially, to further compress the gas to preserve the sample phase state upon removal to the surface.



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(72) cont

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